

REMARKS/ARGUMENTS

The Examiner is thanked for issuing a non-final rejection in order to try to present his analysis in a clearer fashion.

The rejections based on Orenstein and Yamada

The Examiner rejects claims 1, 5-10 and 13-16 as allegedly being obvious in view of these two documents.

The Examiner is thanked for providing a more complete analysis regarding why he is rejecting claim 1, but even the more complete analysis in this official action fails to address all of the limitations of claim 1. On page 3 of the official action, the Examiner reads the recited "gain element" of claim 1 on Orenstein's waveguide (WG) laser and the Examiner reads the recited "first optical path" also on Orenstein's waveguide laser. The examiner makes reference to a "passive WG" as well without identifying how it might be arranged with reference to Orenstein's laser WG. Ingoing this issue for the moment, note that claim 1 specifically recites, *inter alia*:

a gain element, having an optical output, the gain element having a body of material different than said integration platform, being disposed on said integration platform;

a first optical path receiving optical output from said gain element, said first optical path comprising a silica waveguide within said integration platform ... [emphasis added]

Note that the recited gain element of claim 1 is "disposed on said integration platform" while the recited first optical path receiving optical output from said gain element is "within said integration platform".

In Orenstein, the laser WG as well as any passive WG (if it exists) is also within Orenstein's substrate, which the Examiner reads on the recited "integration platform". The limitation "a gain element, having an optical output, the gain element having a body of material different than said integration platform, being disposed on said integration platform" of claim 1 is simply NOT met by Orenstein's laser WG. It is located in the wrong place to meet the language of claim 1. And if the Examiner proposes to move it, based on some rationale for doing so, then the recited "first optical path receiving optical output from said gain element" ends up in the wrong place to meet the language of claim 1.

With respect to the asserted "passive WG" please identify where it allegedly exists in Orenstein in the manner required by 37 CFR 1.104 and please explain how it reads on the recited "first optical path receiving optical output from said gain element" of claim 1.

The applicant also disagrees with the Examiner's rationale for combining Orenstein and Yamada. The Examiner states that the rationale for modifying Orenstein is "to allow for heat dissipation through the substrate" noting a sentence at lines 49-51 of Column 1 of Yamada. But the Examiner has not demonstrated that heat dissipation is a problem in Orenstein which needs to be solved, and even if it were, then why not also dispose the wave guiding optical fibers in V-grooves on the surface of the optical bench as also taught by Yamada? Note how Yamada strongly recommends such a construction at lines 45-50 of Column 1, that is, immediately prior to the sentence focused on by the Examiner. Would not exposing the optical fibers further assist in heat dissipation, assuming that is indeed a problem which needs to be solved in Orenstein?

Why focus on some features of Yamada and ignore others? The Examiner selects features from Yamada based on the language of claim 1 (for example) as opposed to what might make sense to a person of ordinary skill who did not have the privilege of reading applicant's patent application. The Examiner is using the claims as a road map to the prior art as opposed to looking at what the prior art really teaches. In effect, the

Examiner is using applicant's own disclosure against applicant when picking and choosing elements of Orenstein and Yamada based on the subject matter of the claims.

New Claim 31, dependent on claim 1, recites that the fixed grating generates "a sequence of Bragg reflectivity peaks in the optical signal" and wherein "a passband of the tunable microresonator" selects "one of the peaks in said sequence of Bragg reflectivity peaks".

Claim 10 already includes the limitation "coupling a tunable microresonator having a passband to a fixed grating having a plurality of reflection peaks via a silica waveguide in said integration platform, said silica waveguide including a UV-induced sampled grating."

Orenstein is fundamentally different. Note the following disclosure in Orenstein at column 1, lines 51-55:

"The present invention relates to a monolithically integrated tunable laser, in which at least one microring resonator is used (replacing the superstructure gratings in the conventional devices of the kind specified) to generate a spectral comb of frequencies. By this, the main shortcomings of both conventional monolithical methods can be overcome."

Orenstein then goes on to tout in his numbered paragraphs the advantages of using a microring resonator – rather than a superstructure grating – to generate a sequence of spectral peaks. See column 1, line 64 through column 2, line 18. In claim 31, the recited fixed grating generates "a sequence of Bragg reflectivity peaks in the optical signal" and the microresonator is used for a different purpose, namely, the selection of "one of the peaks in said sequence of Bragg reflectivity peaks".

In short, Orenstein's grating generates "a single transmission peak". See column 1, line 66 where this point is discussed.

Claim 31 emphasizes this difference and no amendment of claim 10 is needed since the present claim language quoted above differentiates claim 10 from Orenstein in this regard. Note how Orenstein tells the reader why complex gratings as used in the prior art he acknowledges are not good to use due to their adverse effects on yields, etc. So the reader is lead down different path altogether and away from the invention as claimed by claim 10 or claim 31 for that matter.

It is believed that these differences clearly distinguish the claims 10 and 31 from the teaching reference Orenstein and thus a further analysis of Yamada (so far as the rejection of claim 10 is concerned) is not needed.

The rejections based on Orenstein, Yamada and still additional art

Claim 17 is rejected based upon a hindsight combination of four prior art references. The applicaNT has already demonstrated by the proposed combination of Orenstein and Yamada is based upon applicants own teaching as opposed to what these references teach by themselves.

It is not believed that a detailed analysis of Soref (so far as the rejections of claims 3 and 11 are concerned) is needed and a discussion of Tanaka (so far as the rejections of claims 17, 19-23 and 26 are concerned) is likewise not needed. Those references were cited for propositions unrelated to the issues raised above regarding Orenstein and Yamada.

Claim 29

The Examiner states that claim 29 is rejected "for the same reasons outlined in the rejection to claims 1 and 17 above". This rejection is not understood. Claim 29 reads differently and includes different limitations compared to claims 1 and 17 and since the analysis the Examiner provided vis-a-vis claims 1 and 17 does not mention "a tunable group III-V Fabry-Perot etalon" as recited in claim 29, for example, how is the applicant supposed to understand this rejection when the commentary does not address all its

limitations? The rejection clearly does not comply with 37 CFR 1.104. The rejection should be withdrawn not only on its merits but also for failure to comply with 37 CFR 1.104.

Claims 17 and 29 have been amended slightly in order to improve their readability.

New Claim 33 is patterned after claim 17, but is somewhat more narrowly written. New dependent claims 32, 35, 37 and 39 recite that the gain element is a semiconductor optical amplifier which is different than the laser taught by Orenstein. New dependent claims 31, 34, 36 and 38 recite that the sampled grating has a sequence of Bragg reflectivity peaks and wherein a passband of the tunable element selects one of the peaks in the sequence of Bragg reflectivity peaks. This point of differentiation *vis-a-vis* Orenstein has already been discussed.

Reconsideration of the rejection is respectfully requested.

The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account no. 12-0415. In particular, if this response is not timely filed, then the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136 (a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

I hereby certify that this correspondence is being
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(Date of Deposit)

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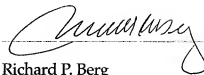


(Signature)

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